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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/587,222	07/24/2006	Mitsuyuki Fujisawa	JFE-06-1205	8264

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IP GROUP OF DLA PIPER US LLP
ONE LIBERTY PLACE
1650 MARKET ST, SUITE 4900
PHILADELPHIA, PA 19103

EXAMINER	
VELASQUEZ, VANESSA T	
ART UNIT	PAPER NUMBER
1793	
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12/31/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/587,222	FUJISAWA ET AL.	
	Examiner	Art Unit	
	Vanessa Velasquez	1793	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *09 October 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-16 and 18-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-16 and 18-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Status of Claims

Claim 17 is canceled. Claims 1-16 and 18-20 are pending and presented for examination.

Status of Previous Rejections under 35 USC § 112

The previous rejections of claims 12-20 under the second paragraph of 35 U.S.C. 112 are withdrawn in view of Applicant's amendments to the claims.

The previous rejection of claim 17 under the second paragraph of 35 U.S.C. 112 is moot in view of Applicant's cancellation of the claim.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.

4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. Claims 1-4, 6-12, 16, and 18-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Alfonsson et al. (US 2003/0172999 A1) in view of Durand-Charre (*Microstructure of Steels and Cast Irons*).

Regarding claim 1, Alfonsson et al. teach a ferritic-austenitic stainless steel comprising ferrite and 35-65 volume percent austenite (abstract, para. [0001]), which lies within the claimed austenite range. The stainless steel also contains 0.005-0.07 weight percent carbon and 0.15-0.30 weight percent nitrogen (para. [0011], [0018]), which totals a carbon and nitrogen (C+N) sum of 0.155-0.37 and overlaps the claimed range. (Note: The endpoints of the C+N sum are obtained by adding the endpoints of the carbon and nitrogen ranges.) The overlap between the ranges taught in the prior art and in the claimed ranges is sufficient to establish a *prima facie* case of obviousness (MPEP § 2144.05).

Still regarding claim 1, Alfonsson et al. do not explicitly teach that the carbon and nitrogen reside in the austenitic phase. However, Alfonsson et al. acknowledge that carbon and nitrogen promote the formation of austenite in steel (para. [0021], [0028]). Durand-Charre support the teaching that carbon and nitrogen stabilize austenite, and further teach that carbon and nitrogen are not easily soluble in ferritic stainless steels (page 323, Section 19-6, first paragraph). It is noted that the remaining phase in the duplex-microstructure steel of Alfonsson et al. is ferrite. Therefore, upon considering the teachings of Durand-Charre, one of ordinary skill in the art would expect substantially all the carbon and nitrogen in the stainless steel of Alfonsson et al. to reside in the austenitic phase.

Regarding claim 2, it has been established that "[w]hen the structure recited in the reference is substantially identical to that of the claims, claimed properties of functions are presumed to be inherent" (MPEP § 2112.01). In the instant case, the chemical composition and microstructure of the stainless steel of Alfonsson et al. overlap the claimed chemical composition and microstructure. Therefore, the stainless steel of the prior art would be expected to possess any properties, such as an elongation of about 48% or larger, as claimed.

Regarding claim 3, Alfonsson et al. teach that the stainless steel further comprises the following elements (para. [0011]-[0019], [0031]):

Element	Claim 3	Alfonsson et al.
C	0 - 0.2	0.005 - 0.07
Si	0 - 4	0.1 - 2.0
Mn	0 - 12	3 - 8
P	0 - 0.1	0 - 0.035
S	0 - 0.03	0 - 0.10

Cr	15 - 35	19 - 23
Ni	0 - 3	0.5 - 1.7
N	0.05 - 0.6	0.15 - 0.30
Fe + impurities	balance	balance

The ranges in the prior art overlap the claimed ranges.

Regarding claim 4, Alfonsson et al. teach that the stainless steel comprises 3-8 wt.% manganese and 0.5-1.7 wt.% nickel (para. [0013], [0015]), which overlap the claimed ranges. The balance comprises iron and impurities (para. [0019]).

Regarding claims 6 and 7, Alfonsson et al. teach that the stainless steel comprises 0.1-2.0 wt.% silicon, 3-8 wt.% manganese, and 0.5-1.7 wt.% nickel (para. [0012], [0013], [0015]), which overlap the claimed ranges. The balance comprises iron and impurities (para. [0019]).

Regarding claims 8 and 16, Alfonsson et al. teach that the stainless steel may further comprise 0.1-1.0 wt.% molybdenum and 0-1.0 wt.% copper (para. [0026]-[0027]), which lie within the claimed ranges.

Regarding claim 9, Alfonsson et al. show that the stainless steels may contain 0.024-0.035 wt.% vanadium (Table 1), which lies within the claimed range.

Regarding claims 10 and 18, Alfonsson et al. show that the stainless steels may contain 0.001 to 0.17 wt.% aluminum (Table 1), which lies within the claimed range.

Regarding claims 11 and 19, Alfonsson et al. teach that the stainless steels may contain up to 0.005% boron (para. [0029]), up to 0.03% calcium (para. [0030]), up to 0.03% cerium (a REM) (para. [0030]), and 0.002-0.005 wt.% Ti (Table 1).

Regarding claims 12 and 20, Alfonsson et al. teach a ferritic-austenitic stainless steel comprising ferrite and 35-65 volume percent austenite (abstract, para. [0001]), which lies within the claimed austenite range. The stainless steel also contains 0.005-0.07 weight percent carbon and 0.15-0.30 weight percent nitrogen (para. [0011], [0018]), which totals a carbon and nitrogen (C+N) sum of 0.155-0.37 and overlaps the claimed range. (Note: The endpoints of the C+N sum are obtained by adding the endpoints of the carbon and nitrogen ranges.) The stainless steel further comprises the following elements (para. [0011]-[0019], [0031]):

Element	Claim 12	Alfonsson et al.
C	0 - 0.2	0.005 - 0.07
Si	0 - 4	0.1 - 2.0
Mn	0 - 10	3 - 8
P	0 - 0.1	0 - 0.035
S	0 - 0.03	0 - 0.10
Cr	15 - 35	19 - 23
Ni	1 - 3	0.5 - 1.7
N	0.05 - 0.6	0.15 - 0.30
Fe + impurities	balance	balance

The overlap between the ranges taught in the prior art and in the claimed ranges is sufficient to establish a *prima facie* case of obviousness (MPEP § 2144.05).

Still regarding claim 12, Alfonsson et al. do not explicitly teach that the carbon and nitrogen reside in the austenitic phase. However, Alfonsson et al. acknowledge that carbon and nitrogen promote the formation of austenite in steel (para. [0021], [0028]). Durand-Charre support the teaching that carbon and nitrogen stabilize austenite, and further teach that carbon and nitrogen are not easily soluble in ferritic stainless steels (page 323, Section 19-6, first paragraph). It is noted that the remaining

phase in the duplex-microstructure steel of Alfonsson et al. is ferrite. Therefore, upon considering the teachings of Durand-Charre, one of ordinary skill in the art would expect substantially all the carbon and nitrogen in the stainless steel of Alfonsson et al. to reside in the austenitic phase.

Still regarding claim 12, it has been established that "[w]hen the structure recited in the reference is substantially identical to that of the claims, claimed properties of functions are presumed to be inherent" (MPEP § 2112.01). In the instant case, the chemical composition and microstructure of the stainless steel of Alfonsson et al. overlap the claimed chemical composition and microstructure. Therefore, the stainless steel of the prior art would be expected to possess any properties, such as deep drawability, as claimed.

5. Claims 14 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Alfonsson et al. (US 2003/0172999 A1).

Regarding claim 14, Alfonsson et al. teach a ferritic-austenitic stainless steel comprising ferrite and 35-65 volume percent austenite (abstract, para. [0001]), which lies within the claimed austenite range. The steel exhibits good corrosion resistance and weldability (para. [0008], [0009]). The stainless steel further comprises the following elements (para. [0011]-[0019], [0031]):

Element	Claim 14	Alfonsson et al.
C	0 - 0.2	0.005 - 0.07
Si	0 - 1.2	0.1 - 2.0
Mn	4 - 12	3 - 8

P	0 - 0.1	0 - 0.035
S	0 - 0.03	0 - 0.10
Cr	15 - 35	19 - 23
Ni	0 - 1	0.5 - 1.7
N	0.05 - 0.6	0.15 - 0.30
Fe + impurities	balance	balance

Alfonsson et al. further show that the stainless steels may contain 0.024-0.035 wt.% vanadium (Table 1), which lies within the claimed range. The overlap between the ranges taught in the prior art and in the claimed ranges is sufficient to establish a *prima facie* case of obviousness (MPEP § 2144.05).

Regarding claim 15, Alfonsson et al. teach a ferritic-austenitic stainless steel comprising ferrite and 35-65 volume percent austenite (abstract, para. [0001]), which lies within the claimed austenite range. The steels are resistant to intercrystalline (intergranular) corrosion (para. [0021], [0048]). The stainless steel further comprises the following elements (para. [0011]-[0019], [0031]):

Element	Claim 15	Alfonsson et al.
C	0 - 0.2	0.005 - 0.07
Si	0 - 0.4	0.1 - 2.0
Mn	2 - 4	3 - 8
P	0 - 0.1	0 - 0.035
S	0 - 0.03	0 - 0.10
Cr	15 - 35	19 - 23
Ni	0 - 1	0.5 - 1.7
N	0.05 - 0.6	0.15 - 0.30
Fe + impurities	balance	balance

The overlap between the ranges taught in the prior art and in the claimed ranges is sufficient to establish a *prima facie* case of obviousness (MPEP § 2144.05).

6. Claims 1, 3, and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Matsui et al. (JP 09-209092, English abstract and machine translation) in view of Durand-Charre (*Microstructure of Steels and Cast Irons*).

Regarding claim 1, Matsui et al. teach a stainless steel comprising ferrite and 13-79.7 volume percent austenite (abstract), which overlaps the claimed austenite range. (Note: This range was obtained by subtracting the ferritic and carbonitride phases from 100 percent, the balance being austenite.) The stainless steel also contains 0.06-0.2 wt.% carbon and 0.01-0.15 wt.% nitrogen (abstract), which totals a carbon and nitrogen (C+N) sum of 0.07-0.35 wt.% and overlaps the claimed range. (Note: The endpoints of the C+N sum are obtained by adding the endpoints of the carbon and nitrogen ranges.) The overlap between the ranges taught in the prior art and in the claimed ranges is sufficient to establish a *prima facie* case of obviousness (MPEP § 2144.05).

Still regarding claim 1, Matsuit et al. do not explicitly teach that the carbon and nitrogen reside in the austenitic phase. However, Durand-Charre teach that carbon and nitrogen stabilize austenite, and that carbon and nitrogen are not easily soluble in ferritic stainless steels (page 323, Section 19-6, first paragraph). It is noted that the major secondary phase in the steel of Matsui et al. is ferrite. Therefore, upon considering the teachings of Durand-Charre, one of ordinary skill in the art would expect substantially all the carbon and nitrogen in the stainless steel of Matsui et al. to reside in the austenitic phase.

Regarding claim 3, Matsui et al. teach that the stainless steel has the following chemical composition (abstract):

Element	Claim 3	Matsui et al.
C	0 - 0.2	0.06 - 0.2
Si	0 - 4	0.1 - 2.0
Mn	0 - 12	0.1 - 2.0
P	0 - 0.1	Not taught
S	0 - 0.03	Not taught
Cr	15 - 35	15 - 27
Ni	0 - 3	1 - 8
N	0.05 - 0.6	0.01 - 0.15
Fe + impurities	balance	balance

Matsui et al. do not teach that phosphorus and sulfur are contained in the alloy. Therefore, they will be regarded are being absent (zero weight percent) from the alloy. It is noted that the claim encompasses zero percent. Thus, Matsui et al. still properly reads on the claimed features.

Regarding claim 5, Matsui et al. teach that the alloy comprises 0.1-2.0 wt.% silicon, 0.1-2.0 wt.% manganese, and 1-8 wt.% nickel (abstract), which overlaps the claimed ranges. The balance comprises iron and impurities (abstract).

7. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Matsui et al. (JP 09-209092, English abstract and machine translation).

Regarding claim 13, Matsui et al. teach a stainless steel comprising ferrite and 13-79.7 volume percent austenite (abstract), which overlaps the claimed austenite range. (Note: This range was obtained by subtracting the ferritic and carbonitride phases from 100 percent, the balance being austenite.) The stainless steel further comprises the following elements (abstract):

Element	Claim 13	Matsui et al.
C	0 - 0.2	0.06 - 0.2

Si	0 - 1.2	0.1 - 2.0
Mn	0 - 2	0.1 - 2.0
P	0 - 0.1	Not taught
S	0 - 0.03	Not taught
Cr	15 - 35	15 - 27
Ni	0 - 1	1 - 8
N	0.05 - 0.6	0.01 - 0.15
Fe + impurities	balance	balance

Matsui et al. do not teach that phosphorus and sulfur are contained in the alloy. Therefore, they will be regarded are being absent (zero weight percent) from the alloy. It is noted that the claim encompasses zero percent. Thus, Matsui et al. still properly reads on the claimed features.

Still regarding claim 13, Matsui et al. do not expressly teach that the steel is punch-stretchable and crevice corrosion resistant. However, it has been established that "[w]hen the structure recited in the reference is substantially identical to that of the claims, claimed properties of functions are presumed to be inherent" (MPEP § 2112.01). In the instant case, the chemical composition and microstructure of the stainless steel of Matsui et al. overlap the claimed chemical composition and microstructure. Therefore, the stainless steel of the prior art would be expected to possess any properties, such as punch-stretchability and crevice corrosion resistance, as claimed.

Response to Arguments

Applicant's arguments with respect to claims 1-20 have been considered but are moot in view of the new grounds of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Vanessa Velasquez whose telephone number is 571-270-3587. The examiner can normally be reached on Monday-Friday 9:00 AM-6:00 PM ET.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King, can be reached at 571-272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Roy King/
Supervisory Patent Examiner, Art Unit 1793

/Vanessa Velasquez/
Examiner, Art Unit 1793